WHAT IS CLAIMED IS:

1. An optical waveguide comprising a core layer to be an optical transmission region and an upper clad layer and a lower clad layer covering the surrounding of the core layer, wherein the upper clad layer is formed while being shrunk in the volume and a stress moderating layer for moderating the stress caused by volume shrinkage of the upper clad layer is formed between the upper clad layer and the lower clad layer in at least a portion of a region where the upper clad layer and the lower clad layer are brought into contact with each other.

2. The optical waveguide according to claim 1, wherein the upper clad layer is formed from an organic-inorganic composite.

3. The optical waveguide according to claim 1, wherein the stress moderating layer is formed from a material with a smaller storage modulus than that of a material for the upper clad layer.

4. The optical waveguide according to claim 3, wherein the storage modulus of the stress moderating layer is 100,000 kgf/cm^2 or lower at 30°C.

5. The optical waveguide according to claim 1, wherein the stress moderating layer is formed from an organic-inorganic composite.

6. The optical waveguide according to claim 1, wherein

the core layer and/or the lower clad layer is formed from an organic-inorganic composite.

7. The optical waveguide according to claim 2, wherein the organic-inorganic composite is produced from an organic polymer and a metal alkoxide.

8. The optical waveguide according to claim 2, wherein the organic-inorganic composite is produced from at least one kind of metal alkoxides.

9. The optical waveguide according to claim 1, wherein the lower clad layer is a substrate.

10. The optical waveguide according to claim 1, wherein the lower clad layer is formed on a substrate.

11. The optical waveguide according to claim 1, wherein an upper substrate is installed on the upper clad layer.

12. The optical waveguide according to claim 1, wherein the upper clad layer is formed by layering a plurality of layers.

13. The optical waveguide according to claim 1, wherein the stress moderating layer has a thickness in a range defined as $0.05\ \mu m \leq t \leq 0.25H$, wherein H denotes the thickness of the core layer and t denotes the thickness of the stress moderating layer.

14. The optical waveguide according to claim 1, wherein the stress moderating layer is formed from a

material with a refractive index not higher than that of the material for the core layer.

15. The optical waveguide according to claim 1, wherein the stress moderating layer is formed from the same material as that for the core layer.

16. The optical waveguide according to claim 15, wherein the stress moderating layer is formed integrally with the core layer.

17. The optical waveguide according to claim 15, wherein a groove for separating the core layer and the stress moderating layer is formed in the stress moderating layer in the vicinity of the core layer and the groove is filled with a material having a refractive index lower than that of a material for the stress moderating layer.

18. The optical waveguide according to claim 17, wherein the groove is formed also in the lower clad layer.

19. The optical waveguide according to claim 18, wherein the groove is formed so as to penetrate the lower clad layer and reach the substrate.

20. The optical waveguide according to claim 17, wherein the upper substrate is installed on the upper clad layer and the groove is formed in the upper substrate and the upper clad layer.

21. The optical waveguide according to claim 1, wherein at least one interface of the stress moderating

layer with the upper clad layer and the lower clad layer is roughened.

22. The optical waveguide according to claim 1, wherein a light absorbing and/or scattering component is added to the stress moderating layer.

23. The optical waveguide according to claim 22, wherein the light absorbing and/or scattering component is carbon particles.

24. The optical waveguide according to claim 1, wherein the end faces of the core layer where light comes in and/or comes out are covered with a protection layer of a transparent material.

25. The optical waveguide according to claim 1, wherein the corners of the core layer have a rounded shape.

26. A device for optical communication comprises the optical waveguide according to claim 1 as a medium for transmitting and/or receiving optical signals.